

Amendment under 37 C.F.R. §1.114
Application No. 10/532,827
Attorney Docket No. 052478

REMARKS

Claims 1-8 are pending in the present application. Claim 1 is herein amended. No new matter has been entered.

Claim Rejections - 35 U.S.C. § 103

Claims 1-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over **Hase** (WO 01/32418 with U.S. Patent 7,101,455 used as a translation) in view of **Iizuka** (JP 2002-172639, machine translation) and/or **Okochi** (JP 04080348, abstract).

Favorable reconsideration is requested.

In an interview on November 28, 2007 with Examiner Goff and Applicant's representatives, Examiner Goff stated that if the claims were amended to require a specific controlled cooling temperature range, the rejection would be reconsidered.

Claim 1 has been amended to recite that the temperature is controlled at least within the range of from 180 °C to (lamination temperature - 100 °C). Support for this amendment is in the specification at page 14.

A. Controlling the Temperature within the Recited range

Applicants respectfully submit that Hase, Iizuka and Okochi do not teach or suggest "wherein the temperature is controlled at least within the range of from 180 °C to (lamination temperature - 100 °C)" as recited in amended claim 1.

The Office Action acknowledges that Hase does not disclose controlling the temperature in a width direction of the laminate in a cooling process after the lamination. (Office Action,

July 6, 2007, page 3.) Furthermore, both Iizuka and Okochi are silent about controlling the temperature at least within the range of 180 °C to (lamination temperature - 100 °C). Thus, claim 1 is patentable over the cited references.

B. No Motivation to Combine Hase and Iizuka

Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to combine Hase and Iizuka.

Hase discloses that cooling may be performed by contacting the laminate with a substrate of lower temperature. Hase does not disclose controlling the temperature in a width direction of the laminate in a cooling process after the lamination. Hase does not disclose a cooling substrate having a temperature gradient. Accordingly, Hase does not disclose that the laminate is cooled down non-uniformly.

By contrast, the cooling process disclosed in Iizuka differs from Hase in being performed in the lamination process, not after lamination. For this reason, cooling is performed by flowing water into a coolant passage on a press hot platen. Due to this cooling process, the cooling substrate inevitably has the temperature gradient, while the gradient varies according to the flow direction. Therefore, starting from the non-uniform cooling process, Iizuka analyzes the temperature gradient with flow direction and specifies the suitable temperature gradient in the cooling process.

The Office Action takes the position that Iizuka is analogous and combinable with Hase because Iizuka is directed to a heat lamination process for metallic foils. (Office Action, pages 8

and 9.) However, one of ordinary skill in the art would not have been motivated to combine Hase which does not disclose a non-uniform cooling process with Iizuka which discloses starting from a non-uniform cooling process performed in the lamination process.

Furthermore, Hase discloses preventing wrinkles and curls in the process of producing a laminate suitable for a flexible circuit board. (Abstract.) Iizuka discloses preventing curvature of a product laminate. (Paragraph 3.) Since Hase already discloses preventing wrinkles, one of ordinary skill in the art would not have a need to combine the teachings of Iizuka with Hase.

C. Present Invention and Iizuka are in Non-Analogous Arts

Applicants respectfully submit that the present invention and Iizuka are not in analogous arts.

Iizuka discloses a batch-wise laminating method which is a non-analogous process from the continuous lamination as recited in the claims. Additionally, the curl or dimensional change of the laminate in Iizuka is different from the “end waviness” in the present invention. The continuous lamination process is performed in a roll to roll process as shown in the drawing, and the “end waviness” results from the plastic deformation caused by take-up tension which can not exist in Iizuka. In Iizuka, the curl or dimensional change of the laminate is caused by residual strain in the laminate.

D. Present Invention and Okochi are in Non-Analogous Arts

Applicants respectfully submit that the present invention and Okochi are not in analogous arts.

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Okochi discloses a molten alloyed zinc plating method which is non-analogous to the thermal laminating method of the present invention.

Double Patenting Rejection

Claims 1, 2 and 5-8 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of **Hase** (U.S. 7,101,455) in view of **Iizuka** and **Okochi**; and claims 3 and 4 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of **Hase** (U.S. 7,101,455), **Iizuka** and **Okochi**, and further in view of **Tokabayashi** (JP 04033848). Favorable reconsideration is requested.

The Office Action acknowledges that claims 1-4 of Hase (U.S. 7,101,455) do not encompass the teaching that the temperature of the ends of the laminate is the same as or higher than that of the center portion in the cooling process. The Office Action states that this feature is obvious in view of Iizuki and Okochi.

Applicants respectfully submit that this feature is not obvious in view of Iizuki and Okochi for the same reasons stated above regarding the § 103 rejection based on Hase in view of Iizuki and Okochi.

Conclusion

For at least the foregoing reasons, claim 1 is patentable over the cited references, and claims 2-8 are patentable by virtue of their dependence from claim 1. Accordingly, withdrawal of the rejection of claims 1-8 is hereby solicited.

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In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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